# MECHANICAL DATA SHEET: VESSEL

**PLANT ITEM No.**
***24590-LAW-MV-LOP-VSL-00002***

| | | | |
|---|---|---|---|
| Project: | ***RPP-WTP*** | P&ID: | ***24590-LAW-M6-LOP-P0002*** |
| Project No: | ***24590*** | Process Data Sheet: | |
| Project Site: | ***Hanford*** | Vessel Drawing | ***24590-LAW-MV-LOP-P0002*** |
| Description: | ***LAW Melter 2 SBS Condensate Vessel*** | | |

## Reference Data

| | |
|---|---|
| Charge Vessels (Tag Numbers) | ***Not Applicable*** |
| Pulsejet Mixers / Agitators (Tag Numbers) | ***24590-LAW-MY-LOP-EDUC-00002A*** |
| RFDs/Pumps (Tag Numbers) | ***Not Applicable*** |

## Design Data

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Quality Level | | ***QL-1*** | | Fabrication Specs | ***24590-WTP-3PS-MV00-TP001 (PVDF)*** | | |
| Seismic Category | | ***SC-III*** 1 | | Design Code | ***ASME VIII Div 1*** | | |
| Service/Contents | | ***LAW Condensate*** | | Code Stamp | ***Yes*** | | |
| Design Specific Gravity | | ***1.03*** | | NB Registration | ***Yes*** | | |
| Maximum Operating Volume | gal | ***7,402*** | | Weights (lbs) | Empty | Operating | Test |
| Total Volume | gal | ***9,056*** | | Estimated | ***25,500*** | ***91,700*** | ***100,800*** |
| | | | | Actual * | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Inside Diameter | inch | ***144*** | | | Wind Design | ***Not Required*** | |
| Length/Height (TL-TL) | inch | ***98*** | | | Snow Design | ***Not Required*** | |
| | | Vessel Operating | Vessel Design | Coil/Jacket Design | Seismic Design | ***24590-WTP-3PS-MV00-TP002*** ***24590-WTP-3PS-FB01-T0001*** 1 | |
| Internal Pressure | psig | ***2.00*** | ***15*** | ***125*** | Seismic Base Moment * | ft*lb | |
| External Pressure | psig | ***2.00*** | ***FV*** | ***FV*** | Postweld Heat Treat | ***Not Required*** | |
| Temperature | °F | ***212*** | ***237*** | ***237*** | Corrosion Allowance | Inch | ***0.08 vessel (Note 5), 0.04 Jacket*** 1 |
| Min. Design Metal Temp. | °F | ***40*** | | | Hydrostatic Test Pressure * | psig | |

Note: Please note that source, special nuclear and byproduct materials, as defined in the Atomic Energy Act of 1954 (AEA), are regulated at the U.S. Department of Energy (DOE) facilities exclusively by DOE acting pursuant to its AEA authority. DOE asserts, that pursuant to the AEA, it has sole and exclusive responsibility and authority to regulate source, special nuclear, and byproduct materials at DOE-owned nuclear facilities. Information contained herein on radionuclides is provided for process description purposes only.

**ISSUED BY RPP-WTP PDC**

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3/14/05

EXPIRES 12/10/06

This bound document contains a total of 2 sheets.

| Rev. | Reason for Revision | By | Checked | Review | Approved | Date |
|---|---|---|---|---|---|---|
| 1 | Issued for Permitting Use | K. Brightman | S. Lee | C. Slater | E. Isern | 3/14/05 |
| 0 | Issued for Permitting Use | K. Brightman | S. Lee | C. Slater | E. Isern | 1/27/04 |



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|---|---|---|

## Materials of Construction

| Component | Material | Minimum Thickness / Size | Containment |
|---|---|---|---|
| Top Head | ***SB-575 N06022*** | ***See Drawing*** | ***Auxiliary*** |
| Shell | ***SB-575 N06022*** | ***See Drawing*** | ***Primary*** |
| Bottom Head | ***SB-575 N06022*** | ***See Drawing*** | ***Primary*** |
| Support | ***SA-240 304 (Note 1 & 6)*** 1 | ***See Drawing*** | ***N/A*** |
| Jacket/Coils/Half-Pipe Jacket | ***SA-312 304 (Note 1)*** | ***See Drawing*** | ***N/A*** |
| Internals | ***SB-575 N06022 / SB-622 N06022 (Note 7)*** 1 | ***See Drawing*** | ***Thermowells Primary*** |
| Pipe (Seamless) | ***SB-622 N06022 & SB-622 N06276 (For 1 1/2" & 2" Pipe) / SA-312 TP304*** | ***See Drawing*** | ***Note 2*** |
| Forgings/ Bar stock | ***SB-564 N06022 / SA182 F304*** | ***See Drawing*** | ***N/A*** |
| Gaskets (O Ring) | ***EPDM*** | ***N/A*** | ***N/A*** |
| Bolting | ***SA-193 Gr. B8M / SA-194 Gr 8M*** | ***N/A*** | ***N/A*** |

## Miscellaneous Data

| | | | |
|---|---|---|---|
| Orientation | ***Vertical*** | Support Type | ***Skirt*** |
| Insulation Function | ***Not Applicable*** | Insulation Material | ***Not Applicable*** |
| Insulation Thickness (inch) | ***Not Applicable*** | Internal Finish | ***Descaled as laid*** |
| | | External Finish | ***Note 3*** |

## Remarks

**** To be determined by the vendor.***

***Note 1: Material shall have Carbon Content of 0.030% Max. Non-welded specialty items are excluded from this requirement.***

***Note 2: Nozzle necks below normal operating level are Primary, others Auxiliary. See PVDF and vessel drawing for NDT.***

***Note 3: Shell welds under half pipe coils to be ground smooth. Others descaled as laid.***

***Note 4: Contents of this document are Dangerous Waste Permit affecting.***

***Note 5: Corrosion allowance of 0.01" is also to be added to the external surface of shell under the jacket.*** 1

***Note 6: Use SA-240 316 material for skirt and base chair gussets as design change by SDDR No. 24590-WTP-SDDR-PROC-04-00936.*** 1

***Note 7: Use Hastelloy C-276 in lieu of Hastelloy C-22 material for removable eductor guide cone as reference by SDDR No. 24590-WTP-SDDR-PROC-04-01080.*** 1

## Equipment Cyclic Data Sheet

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